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Remarks: General

The claims have been amended by rewriting Claims 5 and 15~17; canceling Claims 7~12 and 14 without prejudice to or disclaimer of the subject matter thereof; and adding new Claims 18~36. No new matter is added by these amendments.

Various words, phrases and textual passages that were not present in the claims as originally filed or as previously amended have been introduced in the new claims. Basis in the specification for those words, phrases and textual passages is as follows:

in Claims 18, 22, 27 and 35, support for the recitation as to excess silica may be found on page 6 at lines 16~17;

in Claims 19, 23, 28 and 36, support for the recitation as to end uses may be found on page 2 at line 35 to page 3 at line 4;

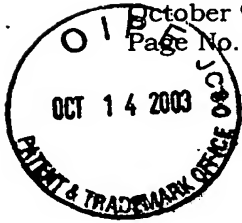
in Claim 29, support for the recitation as to not undergoing phase transformation may be found on page 5 at line 37 to page 6 at line 1.

The amendments to Claims 5, 16 and 17 are not related to patentability inasmuch as they are made solely for the purpose of the reformatting of claim scope or adjusting dependency. Claim 15 has been amended only to rewrite it in independent form to include all of the limitations of the base claim and any intervening claims as needed to overcome the Examiner's objection, but for which that claim was indicated as being allowable. New Claims 18~36 depend from independent claims that have been allowed or objected to, and the addition of those new claims is thus not related to patentability. Those claims are added solely to properly protect the invention by claiming all of the subject matter Applicant is entitled to claim.

The fees due by reason of the addition of Claims 18~36 are calculated on the attached sheet and may be charged to Deposit Account No. 04-1928 (E.I. du Pont de Nemours and Company). If the calculation on the attached sheet is in error, please charge or credit Deposit Account No. 04-1928 accordingly. If any other or additional fee is required to authorize or obtain consideration of this response, please charge such fee to Deposit Account No. 04-1928.

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Claims 1~6 and 15~36 are now active in the application.
Applicant hereby requests reconsideration and further examination of
the application in view of the reasons it has set forth below for
allowance of the claims.



Remarks: Detailed Action

I.

The Examiner has objected to Figs. 3a, 4a, 7a and 7b. Further new drawings for these figures that have greater clarity are submitted herewith, in view of which Applicant respectfully requests the Examiner to withdraw the objection.

II.

The Examiner has rejected Claims 7~11 under 35 U.S.C. §112, first paragraph, for lack of enablement. Although Applicant disagrees with the Examiner's rejection, Claims 7~11 have been canceled in favor of the continued prosecution thereof in a continuation application that will be filed separately by Applicant.

III.

The Examiner has rejected Claims 12, 14, 16 and 17 under 35 U.S.C. §102(b) as being anticipated by WO 92/00929 ("Hu"). Although Applicant disagrees with the Examiner's rejection, Claims 12 and 14 have been canceled in favor of the continued prosecution thereof in a continuation application that will be filed separately by Applicant.

IV.

The Examiner has objected to Claim 15, but has indicated that it would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

Claim 15 has been amended to convert it to independent form and to incorporate therein all of the limitations of Claims 12 and 14. As Claims 16 and 17 have been amended to make them dependent on Claim 15, Applicant respectfully requests that the Examiner withdraw the rejection of Claims 16 and 17 over Hu.

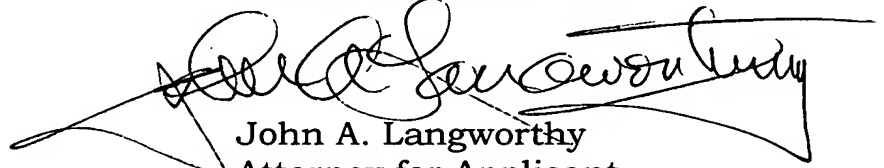
In summary, all rejected claims except Claims 16 and 17 have been canceled. Claim 15 has been amended to incorporate the limitations of the base and intervening claims, and Claims 16 and 17

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have been converted to dependency on Claim 15. All new claims are dependent on either previously-allowed Claims 1 or 4, or on currently-amended Claim 15.

In view of the foregoing, Applicant submits that all of the Examiner's objections and rejections have been properly traversed, and that the pending claims are in condition for allowance, request for which is hereby respectfully made.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John A. Langworthy", is written over a horizontal line. The signature is stylized with large, flowing loops and a long, sweeping underline that extends to the left.

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Appendix A

- (i)** Amendments in marked-up form to Claims 5 and 15~17
 - (ii)** New Claims 18~36, and
 - (iii)** Status of all other claims
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1. (original) A stabilized AlPO_4 composition comprising CaO , SiO_2 and AlPO_4 at a ratio of greater than 0 to less than about 4 mole percent CaO , greater than 0 to less than about 10 mole percent SiO_2 , and greater than about 86 to less than about 100 mole percent AlPO_4 .

2. (original) The composition of Claim 1 comprising CaO , SiO_2 and AlPO_4 at a mole percent ratio of greater than 0 to less than about 3 CaO , greater than 0 to less than about 6 SiO_2 , and greater than about 91 to less than about 100 AlPO_4 .

3. (original) The composition of Claim 1 comprising CaO , SiO_2 and AlPO_4 at a mole percent ratio of about 2.3 CaO , about 5.7 SiO_2 , and about 92 AlPO_4 .

4. (previously presented) A stabilized AlPO_4 composition having a β cristobalite structure, and comprising XO , SiO_2 and AlPO_4 at a ratio of greater than 0 to less than about 4 mole percent XO , greater than 0 to less than about 10 mole percent SiO_2 , and greater than about 86 to less than about 100 mole percent AlPO_4 , wherein X is any cation with an atomic radius of about 1 angstrom that fits stably within the interstices of the cristobalite structure.

5. (currently amended) The composition of Claim 4 wherein X is selected from the group consisting of potassium and copper.

6. (original) The composition of Claim 4 or 5 wherein the mole percent ratio is about 2.3 XO, about 5.7 SiO₂, and about 92 AlPO₄.

7~14. (canceled).

15. (currently amended) A composition according to Claim 14 wherein the single phase, cristobalite AlPO₄ composition that has a cubic structure, space group F-43m, with a ~ 7.2 Angstroms at a temperature of less than about 270°C that comprises a silica dopant and a dopant having a cation with an atomic radius of about 1 angstrom that fits stably within the interstices of the cristobalite structure is CaO, wherein the cation is selected from the group consisting of calcium, potassium and copper.

16. (currently amended) A composition according to Claim ~~14~~15 wherein the cubic structure is maintained up to at least 1000°C.

17. (currently amended) A composition according to Claim ~~14~~15 which is at a temperature in the range of from room temperature to about 250°C.

18. (new) A composition according to Claim 1 which contains excess silica in the molar ratio of calcium oxide to silica.

19. (new) A composition according to Claim 1 in the form of a piezoelectrical material, a support in catalysis, a support in biotechnology, a ceramic filler or a ceramic coating.

20. (new) A composition according to Claim 4 wherein X is copper.

21. (new) A composition according to Claim 4 wherein X is calcium.

22. (new) A composition according to Claim 21 which contains excess silica in the molar ratio of calcium oxide to silica.

23. (new) A composition according to Claim 4 in the form of a piezoelectrical material, a support in catalysis, a support in biotechnology, a ceramic filler or a ceramic coating.

24. (new) A composition according to Claim 15 wherein the cation is potassium.

25. (new) A composition according to Claim 15 wherein the cation is copper.

26. (new) A composition according to Claim 15 wherein the cation is calcium.

27. (new) A composition according to Claim 26 which contains excess silica in the molar ratio of calcium to silica.

28. (new) A composition according to Claim 15 in the form of a piezoelectrical material, a support in catalysis, a support in biotechnology, a ceramic filler or a ceramic coating.

29. (new) A composition according to Claim 15 which has not undergone phase transformation.

30. (new) A composition according to Claim 29 wherein the cubic structure is maintained up to at least 1000°C.

31. (new) A composition according to Claim 29 which is at a temperature in the range of from room temperature to about 250°C.

32. (new) A composition according to Claim 29 wherein the cation is potassium.

33. (new) A composition according to Claim 29 wherein the cation is copper.

34. (new) A composition according to Claim 29 wherein the cation is calcium.

35. (new) A composition according to Claim 34 which contains excess silica in the molar ratio of calcium to silica.

36. (new) A composition according to Claim 29 in the form of a piezoelectrical material, a support in catalysis, a support in biotechnology, a ceramic filler or a ceramic coating.